

Claims

1. A medical device adapted to fit within a patient's urinary bladder, the device comprising:
 - a liner comprising:
 - a reservoir;
 - a first inlet and a second inlet in fluidic communication with the reservoir, each inlet sealably connectable to a respective end of one of the patient's two ureters to pass urine into the reservoir; and
 - an outlet in fluidic communication with the reservoir and extending into the patient's urethra to permit voiding of urine from the reservoir, wherein the liner substantially isolates urine from the urinary bladder.
2. The liner of claim 1, wherein the first and second inlets connect to inlet catheters that are adapted to sealably connect to the respective ends of the ureters.
3. The liner of claim 1, wherein the outlet is adapted to sealably connect to the urethra.
4. The liner of claim 1, wherein the outlet is adapted to extend through a urinary sphincter.
5. The liner of claim 1, wherein the outlet connects to an outlet catheter that is adapted to extend through a urinary sphincter.
6. The liner of claim 5, wherein the outlet catheter comprises a material sufficiently flexible to facilitate compression by the urinary sphincter.
7. The liner of claim 1, wherein the sealable connections comprise at least one biocompatible adhesive.
8. The liner of claim 2, wherein the sealable connections comprise an expandable wall at an end of each inlet catheter that contacts the ureters so as to fix the catheter ends in place and form a liquid-impermeable seal.
9. The liner of claim 2, wherein the inlet catheters are adapted to extend through the ureters and into the patient's kidneys.

10. The liner of claim 1, wherein the liner is made of a pliant material.
11. The liner of claim 1, wherein the liner is made of a material selected from the group consisting of vinyl, polyethylene, PVC, EVA, silicone, latex, and polypropylene.
12. The liner of claim 1, wherein an outer surface of the liner is coated with at least one of heparin and a heparin-like drug.
13. The liner of claim 1, wherein the liner comprises a material that stretches and shrinks.
14. The liner of claim 1, wherein an outer surface of the liner is coated with a hydrogel.
15. The liner of claim 2, wherein the outlet connects to an outlet catheter that is adapted to extend through the urethra.
16. The liner of claim 9, wherein distal ends of the inlet catheters are coiled to fit in a kidney basin.
17. The liner of claim 16, wherein the inlet catheters include a plurality of fins mounted on exterior surfaces of the catheters and adapted to form a liquid-impermeable seal with a wall of each ureter.
18. An apparatus for isolating urine from a patient's urinary bladder, the apparatus comprising:
 - a first catheter positionable in the patient's first ureter, the first catheter including a proximal end and a distal end, the proximal end of the first catheter including a ureter to catheter seal, the distal end of the first catheter being capable of passing through the patient's urinary sphincter; and
 - a second catheter positionable in the patient's second ureter, the second catheter including a proximal end and a distal end, the proximal end of the second catheter including a ureter to catheter seal, the distal end of the second catheter being capable of passing through the patient's urinary sphincter and the distal ends of the first and second catheters being capable of connection to an external urine collection container.

19. The apparatus of claim 18, wherein the first and second catheters each include a valve disposed between the distal end of the catheter and a distal end of the patient's urethra.
20. An apparatus for isolating urine from a patient's urinary bladder, the apparatus comprising:
- a first catheter positionable in the patient's first ureter, the first catheter including a proximal end and a distal end, the proximal end of the first catheter including a ureter to catheter seal;
 - a second catheter positionable in the patient's second ureter, the second catheter including a proximal and a distal end, the proximal end of the second catheter including a ureter to catheter seal; and
 - a third catheter, including a proximal end and a distal end, wherein the proximal end of the third catheter is connected to and joins the distal ends of the first and second catheters and the distal end of the third catheter being capable of passing through the patient's urethra and connection to an external urine collection container.
21. The apparatus of claim 20, wherein the third catheter includes a valve disposed between a distal end of the patient's urethra and the distal end of the third catheter.
22. The apparatus of claim 18 or 20, wherein the seals are composed of at least one biocompatible adhesive.
23. The apparatus of claim 18 or 20, wherein the catheters are composed of materials selected from the group consisting of vinyl, polyethylene, PVC, EVA silicone, latex, and polypropylene.
24. A method of treating urinary bladder diseases comprising the steps of:
- isolating urine from a urinary bladder; and
 - treating the urinary bladder with appropriate medications
25. The method of claim 24, wherein the appropriate medications comprise oral medications.
26. The method of claim 24, wherein the appropriate medications comprise topical medications instilled between a wall of the bladder and a bladder liner.

27. The method of claim 24, wherein the step of isolating urine from the urinary bladder includes inserting a urinary bladder liner into the bladder.

28. The method of claim 24, wherein the step of isolating urine from the urinary bladder includes inserting an apparatus into the bladder that carries urine from ureter orifices to an external urine collection container.

29. An apparatus for isolating urine from a patient's urinary bladder, the apparatus comprising:

a first catheter positionable in the patient's first ureter, the first catheter including a proximal end and a distal end, the proximal end of the first catheter including a ureter to catheter seal, the distal end of the first catheter being capable of passing through a suprapubic incision in the patient's abdomen; and

a second catheter positionable in the patient's second ureter, the second catheter including a proximal end and a distal end, the proximal end of the second catheter including a ureter to catheter seal, the distal end of the second catheter being capable of passing through a second suprapubic incision in the patient's abdomen, wherein the distal ends of the first and second catheters are capable of connection to at least one external urine collection container.

30. An apparatus for isolating urine from a patient's urinary bladder, the apparatus comprising:

a first catheter positionable in the patient's first ureter, the first catheter including a proximal end and a distal end, the proximal end of the first catheter including a ureter to catheter seal;

a second catheter positionable in the patient's second ureter, the second catheter including a proximal and a distal end, the proximal end of the second catheter including a ureter to catheter seal; and

a third catheter, including a proximal end and a distal end, wherein the proximal end of the third catheter is connected to and joins the distal ends of the first and second catheters and the distal end of the third catheter being capable of passing through a suprapubic incision in the patient's abdomen and connection to an external urine collection container.

31. The apparatus of claim 29 or 30, wherein the catheters are composed of materials selected from the group consisting of vinyl, polyethylene, PVC, EVA silicone, latex, and polypropylene.